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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,823

12/19/2005

Joergen Hansen

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EXAMINER

JOIKE, MICHELE K

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,823	Applicant(s) HANSEN ET AL.	
	Examiner MICHELE K. JOIKE	Art Unit 1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,15,16 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7-14 and 17-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/12/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group I in the reply filed on July 8, 2008 is acknowledged. The traversal is on the ground(s) that The Examiner has not provided a prima facie case of distinctness of species. This is not found persuasive because first of all, there was no species election, and secondly the inventions are distinct because in Group I claims are drawn to the method being performed in yeast and Group II claims are drawn to the method being performed in yeast. These Groups contain different organisms, one eukaryotic and one prokaryotic, and are therefore in different classes. Finally, as noted in the restriction requirement, unity of invention was broken.

The requirement is still deemed proper and is therefore made FINAL.

Claims 5, 6, 17, 18 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on July 8, 2008.

Claims 1-4, 8-16 and 19 are examined.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in the EPO on June 19, 2003 and August 26, 2003. It is noted, however, that applicant has not filed a certified copy of the EP03101801.3 and EP03102650.3 applications as required by 35 U.S.C. 119(b).

Specification

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01. The hyperlink is found in paragraph 95.

Claim Objections

Claim 13 is objected to because of the following informalities: The claim needs commas. Claim 9 is also objected to for containing the language “of any of the preceding claims”. Claims 5 and 6 are withdrawn. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 8-16 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 claims a glycosyltransferase capable of glycosylating the produced aglycon under suitable conditions. It is unclear what conditions would be suitable as the specific cell and glycosyltransferase are unknown.

Regarding claims 4 and 16, the phrase "for example", or in this case "e.g." renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 8 recites the broad recitation an UDPG-glycosyltransferase, and the claim also recites "preferably a UDPG-glucosyltransferase " which is the narrower statement of the range/limitation. Using the term "preferably" cause confusion about the intended scope of the claim.

Claim 19 is confusing because it is missing language in line 2; therefore it is unclear how to perform the method in that claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moehts et al in view of Day et al.

Moehts et al (The Plant J. 11(2): 227-236, 1997, especially pp. 227-229, 233, 234 and Figure 7) teach a cDNA encoding solanidine glucosyltransferase (SGT) from potato, and is a UDPG-glucosyltransferase. Solanidine is an aglycon that is in the family of nitrogenous secondary metabolites. Both the SGT and solanidine genes were introduced into *S. cerevisiae*. The cell was allowed to ferment grow and produce the SGT, which then added glucose residues to solanidine as shown in figure 1. The aglycon has a MW of 397.64 (as evidenced by www.rdchemicals.com). Figure 7 shows

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that solanidine was recovered. It also shows that the cell is capable of producing higher amounts of glycosylated solanidine with SGT present, than without. However, Moehs et al does not teach deglycosylating the aglycon.

Day et al (IDS ref. 6, especially abstract, figure 1, table 1, and page 74) teach deglycosylating the aglycon, flavenoid by β -glucosidase.

The ordinary skilled artisan, desiring to deglycosylate an aglycon, would have been motivated to combine the teachings of Moehs et al teaching a method of producing solanidine, with the teachings of Day et al teaching deglycosylating an aglycon because Day et al state that deglycosylation via β -glucosidase is an important step in metabolism. It would have been obvious to one of ordinary skill in the art to deglycosylate the aglycon because Day et al teach that deglycosylation is important for uptake, excretion and biological activity. Given the teachings of the prior art and the level of the ordinary skilled artisan at the time of the applicant's invention, it must be considered, absent evidence to the contrary, that said skilled artisan would have had a reasonable expectation of success in practicing the claimed invention.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moehs et al and Day et al as applied to claims 1-4 and 8-13 above, and further in view of Priefert et al.

Moehs et al teach all of the limitations as described above, however, they do not teach that the aglycon is vanillin.

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Day et al teach all of the limitations as described above, however, they do not teach that the aglycon is vanillin.

Priefert et al (Applied Microbiol. Biotechnol 56:296-314, 2001, especially p. 296) teach production of the aglycon, vanillin.

The ordinary skilled artisan, desiring to produce vanillin, would have been motivated to combine the teachings of Moehs et al teaching a method of producing solanidine, with the teachings of Day et al teaching deglycosylating an aglycon, with Priefert et al, teaching the production of vanillin because Priefert et al state that vanillin is one of the most important aromatic flavor compounds used in foods, beverages, perfumes, and pharmaceuticals. It would have been obvious to one of ordinary skill in the art to produce vanillin because Priefert et al teach that and is produced on a scale of more than 10 thousand tons per year by the industry through chemical synthesis. Given the teachings of the prior art and the level of the ordinary skilled artisan at the time of the applicant's invention, it must be considered, absent evidence to the contrary, that said skilled artisan would have had a reasonable expectation of success in practicing the claimed invention.

Allowable Subject Matter

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHELE K. JOIKE whose telephone number is (571)272-5915. The examiner can normally be reached on M-F, 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Woitach can be reached on 571-272-0739. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NANCY VOGEL/
Primary Examiner, Art Unit 1636

Michele K Joike, Ph.D.
Examiner
Art Unit 1636